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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/050,004	01/14/2002	Mian Smith	015114-054000US	5525

26059 7590 11/13/2003

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EXAMINER

TRA, ANH QUAN

ART UNIT

PAPER NUMBER

2816

DATE MAILED: 11/13/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/050,004

Applicant(s)

SMITH ET AL.

Examiner

Quan Tra

Art Unit

2816

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10, 12-19 and 21-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 2-10, 13-19 and 21-28 is/are allowed.
- 6) ☒ Claim(s) 1 and 12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 09/30/2003 has been entered. A new ground of rejection is introduced as necessitated by amendment.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Utsunomiya et al. (USP 5905291).

As to claim 1, Utsunomiya et al. discloses in figure 10 a charge pump circuit comprising: a first native transistor (14) (column 7, lines 60-65, teaches that transistor M14 having threshold value approximately to 0 V, applicant's response in the Remarks admitted that native transistor as a low threshold voltage (e.g., 0.3 Volts or less)) first depletion transistors (M15-M28) each having a threshold voltage that is lower than a threshold voltage of the first native transistor at a common source voltage (column 7, lines 60-65), wherein the first native transistor and the first

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depletion transistors are coupled together in series between an input and an output of the charge pump circuit; and first capacitors (C1-C28), wherein each of the first depletion transistors is coupled to one of the first capacitors, first subset of the first capacitors (odd number of capacitors) are coupled to receive a first clock signal (Φ), and second subset of the first capacitors are coupled to receive a second clock signal (Φ^*). Figure 10 fails to show the threshold voltage of the first native transistor is greater than zero over a voltage range caused by process variations (error voltage range). However, it is notoriously well known that the boosting circuit figure 10 would fail to pump the output voltage V_{pp} if the threshold voltage of the first transistor is less than 0V (Applicant admitted). Therefore, it would have been obvious to one having ordinary skill in the art to select a native transistor with a very small error voltage range, such that its threshold would not go less than 0V, for the first transistor for the purpose of ensuring the circuit working properly.

As to claim 12, figure 10 shows a method for receiving an input voltage and providing a boosted output voltage, the method comprising: boosting the input voltage by applying a first clock signal (Φ) to a drain of a first native transistor (M14); boosting a source voltage of the first native transistor by applying the first clock signal and a second clock signal (Φ^*) to a drain and source of each of a first set of depletion transistors (M15-M28) that are coupled together in series to provide output voltage, the first set of depletion transistors each having a threshold voltage that is lower than a threshold voltage of the first native transistor at a common source voltage.

Allowable Subject Matter

Claims 2-10, 13-19 and 21-28 are allowed.

Conclusion

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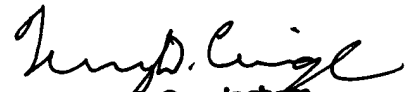
3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Quan Tra whose telephone number is 703-308-6174. The examiner can normally be reached on 8:00 A.M.-5:00 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Callahan can be reached on 703-308-4876. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9318 for regular communications and 703-872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.



QT
June 16, 2003


Terry D. Cunningham
Primary Examiner